

## Properties of carbon compounds

1) Hexane and ethanol are organic compounds, which are liquid at room temperature.

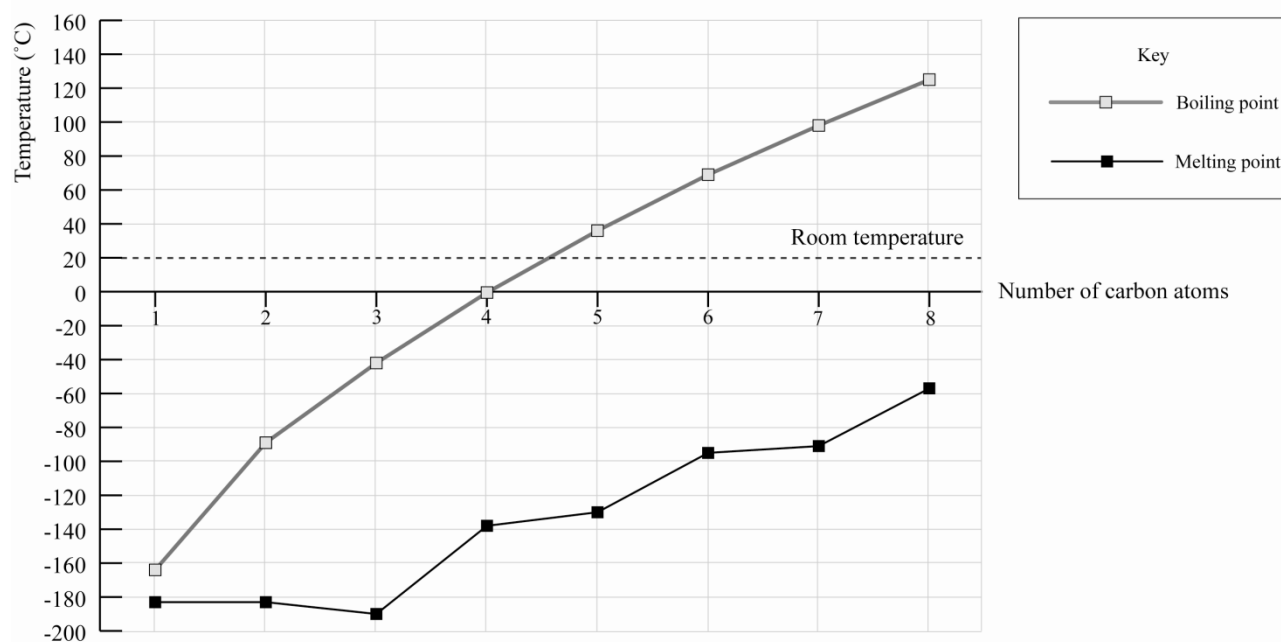
Using **only** water and a Bunsen burner, explain one chemical AND one physical test that could be used to identify hexane and ethanol.

Your answer must include:

- a description of each test
- the observations that would be made for each test for BOTH compounds
- an explanation of the chemical and physical properties of BOTH compounds that allow identification with your tests.

2)

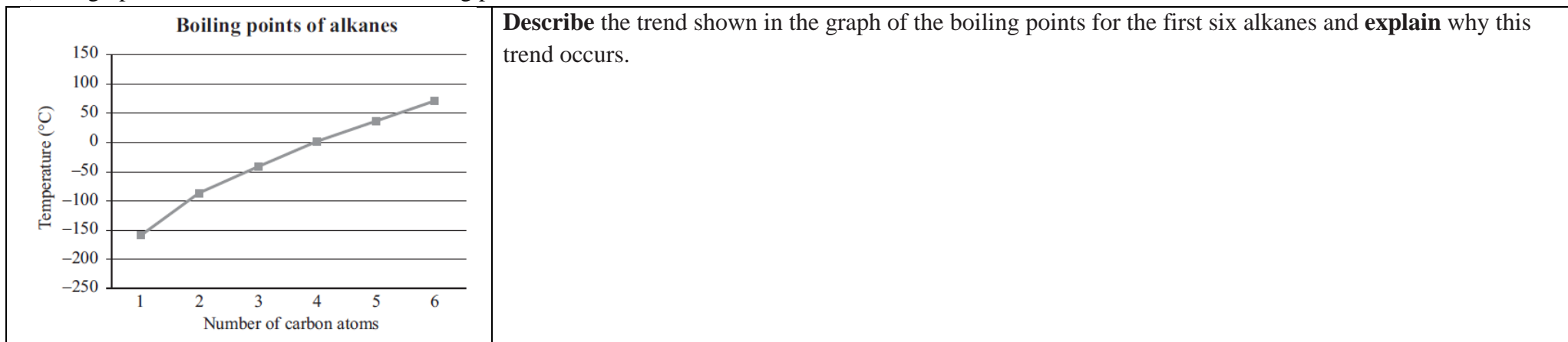
Melting and boiling points of alkanes



Discuss the trend in the melting and boiling points for the first eight alkanes. In your answer, you should:

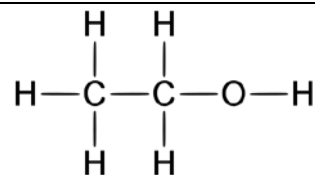
- define the terms melting point and boiling point
- identify the state of the alkanes with three AND with six carbon atoms at room temperature
- explain what happens to the particles in a substance when melting and boiling occur
- fully explain why both the boiling points and melting points of the first eight alkanes tend to rise as the number of carbon atoms increases.

3) The graph below shows the trend of boiling points for the first six alkanes.



4)

Name the process that uses glucose to produce the compound shown



5) Identify the compound(s) in the table below that would be soluble in water.

hexane	ethene	$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{H}-\text{C}-\text{C}-\text{O}-\text{H} \\   \quad   \\ \text{H} \quad \text{H} \end{array}$
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6) Two of the compounds in the table above are gases and two are liquids at room temperature. State which compounds are liquid at room temperature.

methanol	$\begin{array}{c} \text{H} \quad \text{H} \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{H} \end{array}$	pentane
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7) Hexane and ethanol are two colourless liquids. Compare the chemical and physical properties of these two compounds, and use this comparison to describe how to **safely** distinguish between these two liquids.

8) Name TWO organic compounds in the table below that are **insoluble** in water.

methanol	$\begin{array}{c} \text{H} \quad \text{H} \\ \diagdown \quad \diagup \\ \text{C}=\text{C} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{H} \end{array}$	pentane
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